

NEWS REPORT

National Academy of Sciences

National Research Council

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Foreword

DETLEV W. BRONK

President, National Academy of Sciences

THE National Academy of Sciences was founded in 1863, under a Congressional Charter approved by Abraham Lincoln, to further science and to promote the national welfare by advising the Government on scientific matters. With the growth of science in this country, scientific societies were subsequently formed to develop the several fields of science. As the societies multiplied in number and the Nation's need for science increased, it became apparent that an association between the Academy and the societies would increase the services of all to science and to the Nation. Recognition of the value of such cooperation was stimulated by the demands placed on scientists during the First World War. Accordingly, in 1916 there was established within the Academy a National Research Council of societies of science and technology.

During the years of peace that followed, the Academy and Council played an important role in the rapid development of science. With the financial support of the Rockefeller Foundation, postdoctoral fellowships were provided for young men and women who were thus encouraged and fitted to undertake careers in research. Undeveloped fields of science were surveyed and funds for their development were provided. The facts of basic science were applied to the solution of practical problems affecting our national welfare. More effective relations with the scientists of other countries were established.

To meet the requirements of the armed forces in the Second World War, the Office of Scientific Research and Development

was created, and many new Service laboratories were established. Beginning then, the Government largely increased its support of research and development within its own and private organizations, for military and civilian ends. The Academy and Council were thus provided with new opportunities to aid our Government and to further science by supporting such agencies and newly created philanthropic organizations for the financial support of science. To satisfy this need for scientific advice, the Academy and Council have greatly increased the scope of their activities. In thus extending their scope of action they have become an important center for the exchange of ideas and information through the frequent meetings of committees, through conferences and symposia, and through their publications.

The present crisis places heavy responsibilities on scientists and confronts them with difficult decisions. As a cooperative association of individual scientists and scientific societies representing many different fields of science, our organization is well qualified to assist federal agencies in the solution of scientific problems; to encourage the continuation of fundamental research; to cooperate with the Social Science Research Council, the American Council of Learned Societies, and the American Council on Education in matters of common concern; and to provide contacts between scientists and their Government.

It will be the purpose of *NEWS REPORT* to inform all those associated with the Academy and Council of our actions and our undertakings.

Scientific Manpower

M. H. TRYTTEN

Director, Office of Scientific Personnel

POLICIES are now being shaped in the Congress and the Government with regard to the training and utilization of specialized personnel which will profoundly affect the national culture and the national welfare in the future. The problems underlying these policy discussions are as knotty and complex as any that have appeared in the past due to the peculiar nature of the present national emergency.

The problems are created by a number of circumstances, such as the need for an unprecedented military establishment in a nation not accustomed to a large peacetime military force and with its manpower approximately fully employed; the restriction of the impact of mobilization to a narrow age group almost coextensive in age with the age of college and graduate school students; the move toward universal service and away from Selective Service as a national policy; and the need to plan for a possible long-range emergency rather than a precipitate struggle of short duration. Since these are in large measure unprecedented problems they need unprecedented answers. The solutions proposed can and do indicate unprecedented and possibly dangerous impacts upon activities vital to our culture and technology.

The problem has at the present time several main aspects. The most acute problem is that of engineers and other scientists who are in military reserve status. Recent studies indicate that about 25 per cent of the technologists in industry and research establishments are in some type of military reserve status. This creates a problem of great magnitude and of vital importance to the continued functioning without disruption of scientific and production activities. Procedures adopted by the Armed Services for screening requests for delay in call to active duty have for the most part been greatly decentralized and are in general handled by military personnel.

This has made the problem of adequate presentation of evidence in individual cases and of taking appropriate appeals difficult for employers. The problem has been under consideration in the Department of Defense and the National Security Resources Board. The Scientific Advisory Committee of the Board, under the chairmanship of Dr. Charles Thomas, has recommended special procedures in the Armed Services for handling cases of reservists in the specialist category. They have urged the establishment of procedures whereby the call-up of reservists can be reconciled with the needs of educational, research, and production activities for specialized manpower.

The Congress is now considering legislation to amend the Selective Service Act. Senate Bill S-1, now under consideration and proposed by the Armed Services, is the starting point for Congressional discussion of the manpower problem. S-1 is essentially a Selective Service Act, with an added concept of universal training and service for those who become 18 years of age. An additional feature is the provision for the selection of up to 75,000 young men from this age group to attend colleges and universities after 4 months of basic training. According to the present version of the bill they would be selected by a civilian commission of five members appointed by the President and confirmed by the Senate. They would be in civilian status and would wear appropriate identifying insignia. In other respects the procurement of manpower for the Armed Services would be a Selective Service function.

It seems unlikely that the Congress will agree on a bill before late in the spring. Nor is it possible at this time to determine whether or not the desirable features of the bill will survive. There are at the same time serious questions as to the adequacy of the provisions relating to the training and

utilization of specialized personnel. There is no previous experience to gauge the results of the unprecedented provisions of the bill as now drawn.

In the long run under such legislation, if the drafting of 18-year-olds becomes necessary to the fullest extent, there will result a complete departure from the traditional pattern of flow of students from high school to college. They will all enter military service first, unless found not qualified for acceptance, and then will be screened for ROTC and other college training. The manner and effectiveness of screening, the psychological climate in which screening occurs, the degree of control imposed as to choice of institution, and curriculum by the student, and the types of Federal subsidy involved are the questions being considered, the answers to which are of considerable importance. Some of these questions have been raised and may be resolved in specific statutory language. At present the probability is that much will be left to the proposed commission.

One difficult problem is that of phasing. With all 18-year-olds entering service and their entrance governed by age levels (for example, the first taken will be those 18 years and 11 months; next, those 18 years and 10 months, etc.), it would appear almost impossible to identify prior to induction those who should attend college, so as to begin their four months' training in June upon completion of high school. It seems more likely that many will have to wait many weeks before being called and may therefore emerge after four months of training at a time too late to enter the first or even the second semester classes. Some students may lose up to a year to get in their four-month period of training.

It seems clear that for the present Selective Service plays a dominant role in any event. With regard to procedures to insure a flow of students into the colleges this fall and with regard to manpower over 19 years of age and under Selective Service, their procedures will probably govern. It seems likely that Selective Service will be required to take steps soon to set up policies and procedures to select students for continued training and to provide more adequate guides to local boards in deferment actions. Pending clarification of na-

tional policy by the Congress the Selective Service System has been reluctant to set up procedures which would imply fixed national policy. But it is expected that actions will ensue shortly to clarify draft policies in regard to the two matters referred to above.

It is likely that in any event the problem of providing interim procedures, so that students may enter college this fall and that adequate numbers of students now in college may continue another year, must be developed under Selective Service auspices. The forthcoming amendments to the Selective Service Act are not likely to be decided upon by the Congress and agreed to by the President for many weeks. In any event, the setting up of policies and administrative mechanisms under the provisions of S-1 will take much time. In the meantime, the present uncertainties can gravely affect a multitude of personal decisions adverse to a satisfactory flow of students. This is recognized and may lead to early interim policies which will permit students to plan to continue in training.

If present graduate enrollment is not interfered with either by unwise manpower policies or by withdrawal of teaching personnel there may be available in the next few years a substantial increment in highly trained personnel. This oncoming supply can be protected if graduate students are not withdrawn from universities or called upon to take research positions before completing their training.

At no time in the past has the Nation been forced to evaluate the role of higher education in the national life so searchingly as now. Fundamentally there must be a proper understanding by the people of the United States of the vital part played in modern society by the specialist, if a long-range and adequate national policy can emerge and endure. There has been inadequate understanding of the role of the specialist. Higher education in the past has been thought of in terms of the opportunity it presents to the individual to raise his status in the community. The need now is to understand that this is a matter of providing an indispensable national resource through higher education. Only by a clear understanding of this aspect can public support be assured.

Committee on Growth

O. M. RAY

Executive Secretary, Committee on Growth

A MAJOR component of the National Research Council's Division of Medical Sciences is the Committee on Growth, which was created in 1945 under contract with the American Cancer Society as an advisory group on the support of scientific research in the problems of malignant and normal growth. As recommended by the Committee, the Society is currently supporting 254 cancer research projects, 52 fellowships in cancer research, and 38 Damon Runyon clinical research fellowships.

The American Cancer Society fosters a national program of cancer research with 25 cents of each dollar contributed by the public in the Society's annual fund-raising drive. This program supports cancer research in three ways:

1. Grants-in-aid to scientists pursuing specific projects.
2. Fellowship awards to young doctors of medicine or of science seeking training in cancer research.
3. Grants to medical or other institutions conducting integrated cancer research programs or undertaking projects of special interest in the field of cancer.

The latter, known as institutional research grants, are made by the Society's Executive Committee on the recommendations of a research subcommittee.

Recommendations of projects for grants-in-aid and of candidates for fellowships are the responsibility of the Committee on Growth, which is now beginning its sixth year of service in an outstanding and in some respects unique example of cooperation between a voluntary scientific advisory and a voluntary health organization. The Committee on Growth's recommendations involve about 14 of the 25 cents in each dollar available for research, or in the neighborhood of \$1,800,000 a year. In addition, the Committee is responsible for the recommendation of candidates for the clinical

research fellowships awarded by The Damon Runyon Memorial Fund.

Under the chairmanship of R. Keith Canan, Professor and Chairman of the Department of Chemistry, New York University School of Medicine, the Committee comprises 18 leaders in the fields of medicine and the basic sciences. It in turn has the advice of approximately 100 scientists who make up its six sections—Biochemistry, Biology, Biophysics, Chemotherapy, Clinical Investigations, and Fellowships. These sections are in turn divided into seventeen panels—on enzymes, intermediate metabolism, nutrition, proteins, cellular physiology, genetics, morphogenesis, virus, cytochemistry, physics, radiobiology, chemotherapy (the section sits as a panel), clinical physiology of the blood and blood-forming organs, general clinical problems, environmental cancer, hormones, and fellowships (where the section also sits as a panel).

Funds available for grants-in-aid are currently distributed among the general fields of cancer research as follows:

		percent
Biology	\$426,163	26.9
Biochemistry	391,897	24.6
Chemotherapy	214,384	13.5
Clinical	358,085	22.7
Biophysics	194,339	12.2
Total	\$1,584,868	99.9

In addition, about \$200,000 is currently provided for American Cancer Society research fellowships, \$150,000 for Damon Runyon clinical research fellowships, \$110,000 for Damon Runyon senior clinical research fellowships, and, for the first time this year, \$90,000 for American Cancer Society scholars in cancer research. The scholar program was inaugurated by the Society on the Committee's recommendation to help recently trained scientists of

outstanding promise establish themselves in their careers as cancer investigators, particularly to bridge the gap between the completion of fellowship training and the time when the scientist has thoroughly demonstrated his competence as an independent investigator. For each scholar, the Society appropriates \$18,000, to be paid at the rate of \$6,000 a year.

The Committee on Growth was launched on the premise that the research necessary to achieve understanding of the abnormal mechanism of malignant growth can have a firm basis only through a far deeper insight into the fundamental mechanisms of normal cellular growth than science and human ingenuity have thus far been able to disclose. To achieve this objective, established scientists must be encouraged to make investigations pertinent to the cancer

problem and young cancer investigators must be trained to continue these investigations in the future.

The Committee on Growth, which works and meets without compensation and seeks to function as an impartial and objective adviser, feels that its primary responsibility lies in the encouragement of support of fundamental investigations, clinical and non-clinical, which can be expected to contribute new information on the nature of cancer, its prevention or cure. Within the limits of available funds, the Committee has continually endeavored to assure that research projects of excellent caliber and of obvious pertinence to human cancer receive reasonably adequate support without jeopardizing the broad approach which is essential to the basic soundness of such a program.

Highway Research Board Celebrates Thirtieth Anniversary

ROY W. CRUM

Director, Highway Research Board

THE Highway Research Board, one of the oldest operating agencies of the National Research Council, commemorated its Thirtieth Anniversary in a week of intense activity, January 9-12, at the National Academy of Sciences Building.

At this meeting, which was attended by 860 engineers and administrators from Federal agencies, State highway departments, colleges and universities, industries and other street and road organizations, 159 technical papers and committee reports were presented in 31 public sessions.

In opening the meeting, Chairman Ralph A. Moyer called attention to the large segment of the national economy occupied by highway transportation. He estimated that the total annual expenditure in this area amounted to more than 49 billion dollars of which over 3½ billion is used for providing the streets and highways. Dr. Moyer emphasized the need for greater efficiency

and safety in highway transportation in this time of national emergency. He was confident that highway officials and engineers accepted this task as their responsibility and as an opportunity for them to be of service to the country.

Highlighting the program of the anniversary celebration were addresses by Detlev W. Bronk, President of the National Academy of Sciences, and Thomas H. MacDonald, United States Commissioner of Public Roads.

The necessity for the continuation of basic research during the present emergency and for speed in utilizing research results was forcefully presented by Doctor Bronk. Commissioner MacDonald described the formation of the Board and reviewed the achievements in highway research during the past 30 years. He cited the cooperative research of the Federal Government, States, and industries now

being administered and supervised by the Board as a development of significance.

Technical features of the meeting included a symposium of 38 papers on frost action on highways, and a preliminary report on the effects of four different truck axle loadings on a concrete pavement in Maryland.

For 30 years the Highway Research Board, operating under the auspices of the Division of Engineering and Industrial Research of the NRC, and with the support of the Bureau of Public Roads, the American Association of State Highway Officials, the highway departments of the States and Territories and many other organizations, has served as a center of crystallization for research relating to highway building, administration, and operation.

As an agency of the NRC the Board is assured of an objective, unprejudiced and impartial approach to its duties of providing a clearing center for highway research. The present voting membership comprises the representatives of 10 agencies of the Federal Government, 17 institutions educational in nature, and 15 national industrial organizations. Associates of the Board are individuals and companies qualified by interest and activity in highway research who desire to further its work.

In its practical workings the functions of the Highway Research Board are: *a*) to provide a forum for the presentation and discussion of the results obtained by individual research workers; *b*) to organize and assist committees of experts to plan and suggest research projects and to study and correlate results; *c*) to publish and disseminate technological information; *d*) to provide a staff of specialists for field work with the research agencies and for the assistance of the committees; and *e*) to administer and direct cooperative research undertakings.

ANNUAL MEETING

Research on highway problems has increased in keeping with the growth of highway transportation since 1920. The Board has also enjoyed a steady growth. The first annual meeting was held on January 16, 1922 with 30 members, committee members, and guests present. Four committee reports were presented and discussed. By

the fourth annual meeting the attendance had grown to 273 and 22 reports were presented, as compared with 860 and 159 at the thirtieth annual meeting.

COMMITTEES

The committee structure of the Board has expanded from the original four committees in 1920 to seventy-nine in 1950. The 625 members of these committees represent agencies of the Federal Government, State highway departments, engineering colleges and industry. They are organized under six departments: Economics, Finance and Administration; Design; Materials and Construction; Maintenance; Traffic and Operations; and Soils Investigations. The functions of the committees are to plan and promote needed research, to organize task groups for specific projects, to stimulate the presentation of reports, to aid in correlating the work of the various research agencies, and to review the available data on particular problems with a view to drawing conclusions and making recommendations.

FIELD SERVICE

An important milestone in the history of the Board was the inauguration in 1945 of its Highway Research Correlation Service. This Service, through the support of the highway departments of the States, the District of Columbia, Hawaii, Puerto Rico, and the Bureau of Public Roads, has made it possible for the Board to maintain a staff of specialists in highway economics, finance, administration, design, materials, construction, maintenance, equipment, traffic, operation, and soils. Through field visits and correspondence, these men work directly with the research agencies in highway departments, colleges and universities, Government, and industry.

COOPERATIVE RESEARCH PROJECTS

In mentioning the cooperative research activities of the Highway Research Board, Commissioner MacDonald emphasized the importance of this type of effort. It is clear that the resources of the Federal Government, the State highway departments, and industry should be combined for attack upon the many far-reaching problems of mutual and general interest, if highway problems are to be solved quickly and

efficiently. The trend in this direction, in which the facilities of the Board are playing an important part, shows promise of producing results of real benefit to the public.

Current projects include:

1. Structural Design of Non-rigid Pavements—in cooperation with the Bureau of Public Roads and the Asphalt Institute.

2. Effects of Calcium Chloride in Stabilization—in cooperation with the Calcium Chloride Association.

3. Investigation of the Effects of Different Axle Loads Upon a Concrete Pavement—in cooperation with the Bureau of Public Roads, the Department of Defense, the highway departments of eleven States and the District of Columbia, the motor vehicle

manufacturing industry, and the petroleum industry.

4. Intergovernmental Relationships in Highway Affairs—in cooperation with the Bureau of Public Roads, the Council of State Governments, American Municipal Association, National Association of County Officials, and the Automotive Safety Foundation.

5. Wind Forces on Bridges—in cooperation with sixteen or more State highway departments.

Additional road tests of the effects of various truck axle loads upon different types of pavements are under consideration by the Southeastern, Western and Mississippi Valley Associations of State Highway Officials.

ANNOUNCEMENTS

ANNUAL MEETING NATIONAL ACADEMY OF SCIENCES

The 1951 Annual Meeting of the National Academy of Sciences will be held on April 23, 24, and 25, at the home of the Academy in Washington. The program will include the presentation of scientific papers on Monday, April 23, the annual business meeting on Tuesday, and a special scientific session at the National Bureau of Standards on Wednesday in recognition of the fiftieth anniversary of the founding of the Bureau.

Ira S. Bowen, Director of Mt. Wilson and Palomar Observatories, will give the Monday evening lecture at the Academy building. His subject will be "Palomar Observatory." A smoker at the Cosmos Club for Academy members only will follow the lecture.

The Committee on Arrangements is composed of E. U. Condon, William W. Rubey, Alexander Wetmore, Benjamin H. Willier, Ralph W. G. Wyckoff, D. W. Bronk, *ex officio*, and F. E. Wright, *Chairman*.

METALLURGICAL ADVISORY BOARD

A Metallurgical Advisory Board has been established at the request of the Chairman of the Research and Development Board, Department of Defense, to advise on all metallurgical research pertinent to the in-

terests of the Army, Navy, and Air Force.

Dr. Robert F. Mehl, Director of Metals Research Laboratory of the Carnegie Institute of Technology, has been appointed Chairman of this new Board. He has been granted a leave of absence from Carnegie Institute of Technology in order to come to the National Research Council and devote full time to organizing and initiating operations of the Board.

SYMPOSIUM ON MILITARY PERSONNEL

A symposium on selection and classification of military personnel, organized at the request of the Research and Development Board, will be held under the auspices of the National Academy of Sciences on April 12, 13, and 14. The medical, psychological and anthropological aspects of the selection, classification, and assignment of military personnel will be considered.

Detlev W. Bronk, President of the National Academy of Sciences, will open the symposium, which will be under the general chairmanship of Leonard Carmichael, Chairman of the Section on Psychology of NAS and President of Tufts College. Among the speakers expected to participate are: Mrs. Anna Rosenberg, Assistant Secretary of Defense; Frank A. Geldard, University of Virginia; and Francis G. Blake, Yale

University. A complete list of members of the symposium will be announced later.

OFFICE OF SCIENCE ADVISER

Joseph B. Koepfli, of the California Institute of Technology, has been named Science Adviser in the Department of State. In this capacity Dr. Koepfli will participate in the formulation of U. S. foreign policy from the standpoint of science and technology and advise on all scientific aspects of programs under the jurisdiction of the Department. In carrying out this important assignment, Dr. Koepfli will seek advice from scientists in all fields and attempt to establish close working relationships between American scientists and Government officials in such matters as policy formulation and administration of scientific programs.

According to present plans Dr. Koepfli will be assisted by a small professional staff including specialists in the physical, biological, and engineering sciences. In addition to these men who will be located in the Washington office, a number of top-flight American scientists will be assigned to important foreign service posts. These men attached to the American embassies overseas will keep Dr. Koepfli informed on developments in science abroad and will facilitate the flow of scientific information between this country and friendly nations.

Creation of the Office of Science Adviser was proposed in a report on "Science and Foreign Relations" prepared by Lloyd V. Berkner, special consultant to the Secretary of State. The implementation of the various recommendations contained in Dr. Berkner's report is one of the important tasks of the new office. High on the list of recommended activities is that of liaison with scientific organizations, both public and private. This function is well under way and already has proved to be very valuable to scientists and Government officials alike.

The Academy-Research Council is cooperating in this program by serving as a central office through which non-government scientific groups may contact the Office of Science Adviser and in turn the other agencies and divisions in the Department of State which handle matters relating to science and international relations in science.

DIVISION OF MATHEMATICS

The National Research Council announces the formation of a new division to be known as the Division of Mathematics. Marston Morse, professor of mathematics at the Institute for Advanced Study, Princeton University, has been appointed Chairman. The new division will be composed of mathematicians who were formerly members of the Division of Mathematical and Physical Sciences—now the Division of Physical Sciences—and others to be appointed by the Chairman of the NRC. Marshall Stone, Chairman of the Department of Mathematics at the University of Chicago, will serve as Vice-Chairman. J. R. Kline of the University of Pennsylvania has accepted appointment as Executive Secretary of the Division.

INTERNATIONAL RELATIONS

Wallace W. Atwood, Jr. has assumed his duties as Executive Secretary of the Division of International Relations of the NRC. Dr. Atwood's appointment to this office as a full-time member of the staff assures an expanded program in the field of international relations and establishes an important center of liaison with the Office of Science Adviser, Department of State. Dr. Atwood will have responsibility for the activities of the Academy-Research Council in international relations in science under the direction of Dr. Roger Adams, Foreign Secretary of the Academy and Chairman of the Division of International Relations. He will handle matters pertaining to the International Scientific Unions, UNESCO, and similar programs and activities. Dr. Atwood was formerly with the Committee on Geophysics and Geography of the Research and Development Board, Department of Defense.

CHEMISTRY APPOINTMENT

Robert E. Connick, of the University of California at Berkeley, has been appointed Executive Secretary of the Division of Chemistry and Chemical Technology of the NRC. He will be responsible for the Academy-Research Council activities in the field of chemistry under the direction of W. A. Noyes, Jr., Chairman of the Division.

SCIENCE NEWS

NUCLEAR SCIENCE

Radiobiology

The Subcommittee on Radiobiology of the Committee on Nuclear Science has been reconstituted, under the Division of Physical Sciences, with membership as follows: Hyman L. Friedell, University Hospitals of Cleveland, *Chairman*; Austin M. Brues, Argonne National Laboratory and University of Chicago; Howard J. Curtis, Brookhaven National Laboratory; Louis H. Hempelmann, University of Rochester; Alexander Hollaender, Oak Ridge National Laboratory; Martin D. Kamen, Washington University; Salvador E. Luria, University of Illinois; James J. Nickson, Memorial Hospital, New York City; Harvey M. Patt, Argonne National Laboratory; Karl Sax, Harvard University; Arthur K. Solomon, Harvard Medical School; Cornelius A. Tobias, University of California, Berkeley; and Raymond E. Zirkle, University of Chicago; *Liaison members*: Rear Admiral Charles F. Behrens, Naval Medical Research Institute; Walter D. Claus, Atomic Energy Commission; Orr E. Reynolds, Office of Naval Research; and Lawrence W. Tuttle, Atomic Energy Commission; *NRC representatives*: Milton O. Lee, Division of Biology and Agriculture; Philip S. Owen, Division of Medical Sciences; and R. Clifton Gibbs, Division of Physical Sciences. The reconstituted subcommittee held its first meeting on January 29.

Glossary

Three of the nine sections of the *Glossary of Terms in Nuclear Science and Technology* have been published in preliminary form by the American Society of Mechanical Engineers. The sections on Instrumentation (VII) and Metallurgy (IX) of the glossary have been examined by review committees appointed by the NRC and are now ready for publication. The remaining sections will appear as rapidly as completed. The terms in the glossary have been approved by the American Standards Association as "Proposed American Stand-

ards." The glossary project is sponsored by the NRC Conference on Nuclear Glossary in which six divisions of the NRC are cooperating.

ENGINEERING AND INDUSTRIAL RESEARCH

Fire Resistance

The Building Research Advisory Board announces the publication of the Proceedings of its second research correlation conference on Fire Resistance of Exterior Non-Load-Bearing Walls. For this Conference BRAB selected a subject of widespread controversy resulting from new developments in the design and engineering of the exterior non-load-bearing wall and new materials for its construction. The problems generated are concerned with acceptance of these new developments under existing codes and regulations.

At this Conference architects, engineers, manufacturers, and builders—the men who design and innovate in building construction—were brought together with the specialists on standards, codes, and fire protection in order to examine all phases of the subject.

The papers presented at the Conference and contained in these Proceedings demonstrate equal interest on the part of all speakers in making progress toward the use of new technical developments for the improvement of building construction consistent with safety, functional design, and sound engineering, and they may help in developing the basis for the solution of some of these problems.

New Advisory Committee

At the request of the U. S. Coast Guard an Advisory Committee on the Hazards of Ammonium Nitrate Transportation has been organized as a joint activity of the Divisions of Engineering and Industrial Research and of Chemistry and Chemical Technology. The purpose of the Committee is to advise the U. S. Coast Guard and other Government agencies on the estab-

lishment and conduct of a research program designed to develop better understanding of the hazards involved in the water transportation of ammonium nitrate and ammonium nitrate fertilizer grade.

The Committee is under the chairmanship of Francis C. Frary, Director of Research, Aluminum Company of America. Members of the Committee are: L. F. Audrieth, University of Illinois; Webster N. Jones, Carnegie Institute of Technology; Warren C. Lothrop, Arthur D. Little, Inc.; and Walter C. Schumb, Massachusetts Institute of Technology. Russell S. McBride, Consulting Chemical Engineer, is Executive Secretary of the Committee, and Dr. Clyde O. Davis, on loan to the Academy-Council from the Eastern Laboratory of E. I. du Pont de Nemours & Co., Inc., is serving as consultant to the Committee.

To facilitate liaison with industrial interests in surveying the background for the desired research program, the Manufacturing Chemists' Association, Inc., at the Committee's request, has designated C. P. Davis, American Cyanamid Company, G. Maynard Jenkins, Spencer Chemical Company, and Maurice F. Crass, Secretary of the Manufacturing Chemists' Association, as a liaison committee with the NRC Advisory Committee.

OPERATIONS RESEARCH

The executive group of the Committee on Operations Research met in New York on January 26. Final revisions of a pamphlet on the scope, objectives, and methods of operations research as applied to nonmilitary problems were completed in outline. One of the important tasks now before the Committee is to assist in the development of plans for an Operations Research Training Center at an institution of higher learning.

The following persons have recently been added to the membership of this Committee: Walter Bartky, University of Chicago; L. A. Brothers, Operations Analysis Group, U. S. Air Force; Franklin R. Collbohm, Rand Corporation; Ellis A. Johnson, Operations Research Office, U. S. Army; Charles Kittel, Bell Telephone Laboratories; Morrough P. O'Brien, University of California, Berkeley; Walter A. Shewhart, Bell Telephone Laboratories; Jacinto Steinhardt,

Operations Evaluation Group, U. S. Navy; Frederick F. Stephan, Princeton University; Warren Weaver, Rockefeller Foundation; and Sir Charles Goodeve, British Steel & Iron Research Institute, as a corresponding member. Glen D. Camp, Operations Evaluation Group, U. S. Navy, is serving as Acting Secretary of the Committee.

HIGHWAY ADMINISTRATION

A study of intergovernmental relationships in highway administration is being established under the Highway Research Board. This study has been proposed and will be sponsored jointly by the Bureau of Public Roads, the Council of State Governments, the American Municipal Association, the U. S. Conference of Mayors, the National Association of County Officials, and the Automotive Safety Foundation.

The objectives of the proposed project are: 1) to formulate a comprehensive policy on intergovernmental relationships in highway administration by a study in cooperation with the staffs of the sponsoring organizations; and 2) to conduct a pilot study in a specific state to translate the comprehensive policy into practice.

ARMY MEDICAL LIBRARY

At the request of the Secretary of Defense, the National Research Council has undertaken a comprehensive study of the Army Medical Library. The purpose of this study is to appraise the functions of the Library and in light of these functions to recommend the most appropriate and advantageous location for the Library in the Federal Government organization.

The Committee appointed to conduct this study held its first meeting on January 25. At this meeting the historical development and contributions of the Library were discussed. It was brought out that the Library has become pre-eminent throughout the medical world in collecting both historical and current material, in preparing keys to make these medical literature resources known, and in providing interlibrary loan service. Committee members agreed that maintenance of a national medical library is essential to the welfare of the country and that it is a proper function of government to insure continuance of serv-

ices to medicine and scientific research such as are being provided by the Army Medical Library. The Committee arrived at several tentative conclusions regarding the problem raised by the Secretary of Defense but these will not be reported until the study is complete.

Members of the Committee are: George W. Corner, Carnegie Institution of Washington, *Chairman*; S. A. Asdell, Cornell University; Stanhope Bayne-Jones, New York Hospital; A. R. Dochez, New York City; Alden H. Emery, Washington; LeRoy Johnson, Great Barrington, Mass.; Harry Miller Lydenberg, Greensboro, N. C.; Karl F. Meyer, University of California, San Francisco; Merle A. Tuve, Carnegie Institution of Washington; Alexander Wetmore, Smithsonian Institution; Richard H. Shryock, Johns Hopkins University.

ARMY MEDICAL PROGRAM

A committee has been established, under the auspices of the Division of Medical Sciences, to advise the Department of the Army on matters pertaining to medical research and graduate training. The Committee held its first meeting on January 6 at Walter Reed Hospital.

I. S. Ravdin, Director of the Harrison Department of Surgical Research, University of Pennsylvania Medical School, is Chairman of this Committee. Other members include: W. Edward Chamberlain, Temple University; Thomas Francis, Jr., University of Michigan; Jonas S. Friedenwald, Johns Hopkins University; R. A. Kesser, University of Pennsylvania; C. N. H. Long, Yale University; Howard M. Marjerson, Forsyth Dental Infirmary for Children; Robert F. Pitts, Cornell University; James S. Simmons, Harvard School of Public Health; George W. Thorn, Harvard Medical School; Harold G. Wolff, Cornell University; and Abel Wolman, Johns Hopkins University.

CHEMICAL-BIOLOGICAL COORDINATION CENTER

The Center announces the appointment of the members of its Malignancy Subcommittee: C. Chester Stock, Sloan-Kettering Institute of Cancer Research, *Chairman*; Alfred Gellhorn, College of Physicians and Surgeons, Columbia University; Isidore

Gersh, University of Chicago; Isabella H. Perry, Armed Forces Institute of Pathology; Frederick S. Philips, Sloan-Kettering Institute of Cancer Research; and Howard E. Skipper, Southern Research Institute.

John F. Thurlow was recently appointed by the Center as research associate to its Plant Sciences Subcommittee. Dr. Thurlow received his Ph.D. in biochemistry and plant physiology in 1948 from the California Institute of Technology. Prior to his appointment as research associate, he was employed by the Grasselli Chemicals Department of E. I. du Pont de Nemours & Co.

BIOLOGY AND AGRICULTURE

Indigenous Strains of Maize

The preservation of indigenous strains of maize, many of which are in danger of being lost, is the objective of a new committee of the Division of Biology and Agriculture.

The committee, under the chairmanship of Ralph E. Cleland, also chairman of the Division, has as members: Edgar Anderson, Missouri Botanical Garden; John O. Brew, Harvard University; William L. Brown, Pioneer Hi-Bred Corn Co.; Claud L. Horn, U. S. Department of Agriculture; Paul C. Mangelsdorf, Harvard University; Lewis J. Stadler, University of Missouri; Glen H. Stringfield, Ohio Agricultural Experiment Station; and Paul Weatherwax, Indiana University.

The program of the committee involves: a) the exploration and collection of primitive strains—estimated at more than 4,000—of maize in South America, Central America, Mexico and in our own southwest; b) preservation of seed by cold storage and by culture at necessary intervals; and c) utilization by geneticists and corn breeders.

Introduction of modern varieties of corn in areas of Latin America is causing the widespread abandonment of primitive strains. Some of the genes of these strains may well prove to be of enormous value in the corn economy of this and all other corn-producing countries.

The committee will coordinate its activities with those already under way, under the sponsorship of the Rockefeller Foundation in Mexico and Colombia.

Radiation Biology

A series of three volumes of six or seven hundred pages each on the biological effects of radiation is in preparation by a committee of the Division of Biology and Agriculture, under the chairmanship of Alexander Hollaender, head of the Biology Division, Oak Ridge National Laboratory. One volume will be on high energy radiation, another on ultra-violet radiation and the third on visible radiation. Other members of the committee are: B. F. Kaufmann, Sterling Hendricks, Lauriston Taylor, Hermann J. Muller, Austin H. Brues, John R. Loofbourow, Lewis J. Stadler, A. W. Pollister, Farrington Daniels, Robert Withrow, and H. K. Hartline. These books will supplement or take the place of the two volumes on Biological Effects of Radiation prepared by an earlier NRC committee on radiation and published by the McGraw-Hill Co. in 1936.

Biological Data

The Air Materiel Command has renewed its contract with the National Academy of Sciences for continuing preparation of the *Handbook of Biological Data*. This work is being done by a committee of the American Institute of Biological Sciences. The first fascicle of the book—tables on blood—has been completed and tables in the field of nutrition are in progress.

GEOLOGY

Chemical Composition of Sediments

A Committee on Chemical Composition of Sediments has been established in the Division. It plans to collect data, arrange for, and encourage the analysis of sediments. The ultimate purpose is to produce geochemical balance sheets for the processes occurring in the superficial layers of the earth. It is hoped that any systematic secular variations discovered may prove important in clarifying the chemical history of the earth.

Three immediate projects are contemplated: *a*) analyses of deep sea cores; *b*) analysis of Pre-Cambrian rocks; and *c*) a preliminary study of volumes of different sediment types throughout North America.

Members of the new committee are: G.

E. Hutchinson, Yale University, *Chairman*; L. H. Adams, Carnegie Institution of Washington; L. H. Ahrens, Massachusetts Institute of Technology; Harrison Brown, University of Chicago; and William W. Rubey, U. S. Geological Survey.

GEOGRAPHY

The Committee on Careers in Geography of the Division of Geology and Geography has just completed an extensive "Selected Bibliography on Careers in Geography" which is being distributed by the Division and will also be published in *The Professional Geographer* in the near future.

The Bibliography is briefly annotated and the references are grouped into three categories: Geography as a Career, Geography in Institutions of Higher Learning, and Research Opportunities in Geography. A total of thirty-one references are included.

Material from the Bibliography has also been furnished to the U. S. Bureau of Labor Statistics for use in a report concerning the occupational outlook in the geographic profession.

DEFENSE PRIORITIES

The present priorities rating system, applicable to materials and equipment in short supply, is confined to the use of those governmental agencies which have been delegated the authority to use such ratings by the National Production Authority of the Department of Commerce. These ratings are assigned by the contracting officers who negotiate the contracts.

The preference rating system for defense orders, as well as nonrated orders, is being carefully examined prior to revision. The new system will be similar to the controlled materials plan of World War II. This plan provides assistance to defense-supporting and essential industries, including university and scientific laboratories. The new plan is scheduled to be in operation by July 1.

In the interim period, the National Production Authority is prepared to consider specific requests for emergency assistance to university and scientific laboratories. Such requests will be handled by the Technical Scientific Supplies Division of the National Production Authority.

PACIFIC SCIENCE BOARD

Dr. W. McDowell Hammon of the Graduate School of Public Health, University of Pittsburgh, and Dr. Charles F. Richter of the Seismological Laboratory, California Institute of Technology, have been appointed to membership on the Pacific Science Board.

Harold J. Coolidge, Executive Secretary of the Board, left Washington late in January for conferences in Honolulu, the Philippines, Okinawa, and Japan.

WASTE DISPOSAL AT SEA

The final report of the committee appointed to study the effect of disposal at sea of chemical waste products has been received and is in the process of publication as an NRC bulletin. The investigations upon which the report is based were made over the past three years and involved measurements of a highly technical character, conducted by the Woods Hole Oceanographic Institution. The committee report will record all essential findings in terms familiar to those concerned with the practical aspects of the problem. Techniques utilized in the investigations and details of the measurements will be published in appropriate scientific journals.

ALASKAN SCIENCE CONFERENCE

Proceedings of the Alaskan Science Conference will appear about April 1 and will contain either the full text or an abstract of all material presented. Approximately one hundred papers were read during the course of the Conference, held November 9-11, 1950, at which leading scientists and administrators of the United States and Canada were present. More than 400 people participated in the Conference, which considered problems in the fields of anthropology, botany, agriculture, forestry, public health and medicine, physiology, zoology, geology, geography, geophysics, meteorology, and oceanography. The purpose of the Conference was to further scientific work in Arctic America and to discuss means of coordination by which the results of research might be made more useful to all agencies and individuals interested in the development of Alaska.

Both general and specific recommendations were approved by the Conference. Implementation of the recommendations is now being undertaken by a Continuation Committee under the chairmanship of John C. Reed of the Department of the Interior.

SCIENTIFIC PERSONNEL

NATIONAL SCIENTIFIC REGISTER

Registration of American scientists under the program of the United States Office of Education sponsored by the National Security Resources Board is well under way. Arrangements to carry out this registration were made through the National Research Council, the American Institute of Physics, and the American Chemical Society.

The registration is intended to supplement the existing registration obtained in connection with the publication of *American Men of Science*. Questionnaires have been mailed to physicists, chemists, and those in certain other fields of science.

The Research Council is carrying out its part of the project through the cooperation of various scientific groups. In the field of the biological sciences the American Insti-

tute of Biological Sciences is undertaking the circularization. Similarly, in geology, circularization is being made through the cooperation of the American Geological Institute. Returns have been very satisfactory.

FULBRIGHT FELLOWSHIPS

Applications for awards for university teaching and advanced research for the academic year 1952-53 under the Fulbright programs for Australia, New Zealand, the Philippines, Burma, Thailand, India, and Pakistan are now being accepted by the Committee on International Exchange of Persons.

Approximately 70 awards for university teaching and research are included in the 1952-53 programs. Many of the awards are available to specialists in the natural sci-

ences. The program for India, for example, includes awards for visiting lecturers in Soil Erosion, Nuclear Physics, Geology, and Embryology; and awards for research scholars in Anthropology, Tropical Medicine, Regional Geography, River Control, and Soil Mechanics. Applications for the East Asia and Pacific countries must be postmarked not later than April 15, 1951, to insure consideration.

The opening of a spring competition for countries in the Pacific and East Asia areas places the Fulbright program on a two-phase, or two-cycle, basis. The new schedule has been authorized by the Department of State and the Board of Foreign Scholarships and affects all countries in which the academic year begins during March, April, May, June, or July. Competition for awards in countries in which the academic year begins in the fall, notably countries in Western Europe and the Near East, will be conducted as formerly during the period June 15 to October 15.

Eligibility requirements include United States citizenship. Applicants in the category of visiting lecturers should have teaching experience in an institution of higher learning in the United States. Applicants for research are expected to have the doctoral degree or equivalent professional standing.

Requests for detailed information and application forms should be addressed to the Executive Secretary, Conference Board of Associated Research Councils, Committee on International Exchange of Persons, 2101 Constitution Avenue, Washington 25, D. C.

FOREIGN LECTURERS

Seventy-four scholars in the Netherlands, Egypt, Norway, India, and New Zealand have expressed the desire to teach in American universities or colleges during the academic year 1951-52. The Committee on International Exchange of Persons is attempting to make known to universities and colleges the availability of such scholars, in the hope that a few of them may be invited to serve as visiting lecturers. Such invitations would enable them to apply for Fulbright travel grants.

These scholars represent virtually all fields of learning, but vary considerably in

experience and professional training. There are among them a number of distinguished scholars with established reputations. A list of these scholars with detailed information regarding their education and professional experience may be secured from the Conference Board of Associated Research Councils, Committee on International Exchange of Persons, 2101 Constitution Avenue, Washington 25, D. C.

DOCTORATES IN THE SCIENCES

The Office of Scientific Personnel with the support of the Office of Naval Research is building a file on scientists who earn the doctor's degree. This file includes those who have been awarded the doctorate since January 1, 1936. It will be kept up to date. Already this file has proved its worth. It has yielded valuable information on the sources of scientific personnel and provided data on the institutions and areas that are most productive at both the baccalaureate and graduate levels.

Because of the increased need for information on all of the Nation's trained manpower, the Office of Scientific Personnel is establishing a similar file on doctorates in the Social Sciences and the Humanities. The two files will form a basis for research on the training and utilization of highly trained manpower in the United States.

ADVANCED TRAINING

The Commission on Human Resources and Advanced Training is analyzing all existing rosters and other statistical information relating to the Nation's trained scientists, engineers, social scientists, and other professional personnel. The purpose of the study is to discover trends in the supply and demand for professional personnel. Among questions to be answered are the following: What is the present supply in each field of specialization and what are the characteristics of the people in each field? What is the potential future supply of persons who could be trained for work in each field? What will be the future requirements for people in each field?

The Commission operates under the auspices of the Conference Board of Associated Research Councils. Its work is financed by a two-year grant from the Rockefeller Foundation.

INTERNATIONAL RELATIONS

SCIENTIFIC UNIONS

ICSU

The Executive Board of the International Council of Scientific Unions will hold its 1951 annual meeting in Washington as the guest of the National Academy of Sciences. Professor Alexander von Muralt, President of the International Council, has suggested in a recent letter that the meeting be held during the week of October 14-20 and that one of the days be reserved for a symposium on some phase of international scientific coordination in which American scientists and members of the visiting Council would participate. When final plans for this meeting are determined, further announcement will appear in *News Report*.

IAU

The Department of State has appointed six voting delegates to represent the United States at the Eighth General Assembly of the International Astronomical Union, scheduled to be held in Leningrad, August 1-8, 1951. Although it is hoped that this General Assembly will be held as planned there is indication that the Executive Committee of the Union may vote for cancellation or postponement.

IUPAC

Preparations for the Sixteenth General Assembly of the International Union of Pure and Applied Chemistry have been under way for months. The General Assembly will be one of several features of the 1951 International Conclave of Chemists and Chemical Engineers to be held September 3-15, in New York City and Washington, D. C. Actively engaged in arranging for the Conclave are W. Albert Noyes, Jr., Chairman of the Division of Chemistry and Chemical Technology of the NRC and a vice-president of the International Union; Harry L. Fisher, administrative assistant; and Arthur B. Lamb, chairman of the organizing committee. Complete information on plans for the Conclave may be obtained from Dr. Fisher, National Research Council, Washington 25, D. C.

IGU

The U.S.A. National Committee of the International Geographical Union will hold its next meeting on March 19, 1951, in Chicago, in conjunction with the annual meeting of the Association of American Geographers. Chief items on the agenda concern plans for the 17th Congress to be held in Washington, August 8-15, 1952. Eight subcommittees, which share the responsibility for Congress preparations, will report.

The summer of 1952 will be a busy one for geographers. A preliminary schedule of events is given below:

July

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|-----------|--|
| 25-Aug. 4 | Third Consultation on Geography of the Pan American Institute of Geography and History, <i>Washington, D. C.</i> |
| 27-Aug. 3 | New England Excursion |
| 27-Aug. 3 | Industrial Areas Excursion |
| 27-Aug. 3 | Southern Excursion |

August

- | | |
|-------------|---|
| 4-6 | Centennial Program of the American Geographical Society, <i>New York City</i> |
| 8-15 | Seventeenth International Geographical Congress, <i>Washington, D. C.</i> |
| 17-24 | Industrial Areas Excursion |
| 17-24 | Southern Excursion |
| 17-Sept. 13 | Transcontinental Excursion |

September

- | | |
|------|--|
| 4-16 | Seventh International Congress of Photogrammetry, <i>Washington, D. C., and Dayton, Ohio</i> |
|------|--|

IUCr

The date of the official adherence of the United States to the International Union of Crystallography has been established as July 1, 1949, by action of the Secretary of State. Dues for the last six months of 1949 and for the year 1950 have been paid by the Department of State.

To assist in the initial phases of organization of the Union the NRC has contributed the sum of \$450. This contribution was made at the recommendation of the U.S.A. National Committee of the Union, which desired that this country share in the financial responsibilities of the Union from

January 1, 1949, the date when member nations commenced payment of dues.

Among the initial programs of the Union is one for the publication of crystallographic data. The Union, assisted by the national committees of adhering nations, will publish *Acta Crystallographica*, a new journal in the field; *Structure Reports* containing x-ray diffraction data, and *International Tables for X-ray Crystallography*. The U.S.A. National Committee hopes to contribute \$35,000 to this program and has been authorized by the Academy-Research Council to solicit subscriptions totaling that amount. To date the Committee has received grants of \$10,000 and \$4,000 from the Rockefeller Foundation and the Research Corporation, respectively. These funds will be turned over to the Union for support of the publication program.

IUPAP

Paul P. Ewald, Head of the Department of Physics at the Polytechnic Institute of Brooklyn, has been appointed a member of the U.S.A. National Committee of the International Union of Pure and Applied Physics. Dr. Ewald is a vice-president of the union.

General Assemblies, 1951-52

1951

- June 27- July 3 International Union of Crystallography, 2nd General Assembly, *Stockholm*
- July 11-14 International Union of Pure and Applied Physics, 7th General Assembly, *Copenhagen*
- Aug. 1-8 International Astronomical Union, 8th General Assembly, *Leningrad*
- Aug. 21- Sept. 1 International Union of Geodesy and Geophysics, 9th General Assembly, *Brussels*
- Sept. 8-9, 14-15 International Union of Pure and Applied Chemistry, 16th General Assembly, *New York and Washington*

1952

- Summer International Radio Scientific Union, 10th General Assembly, *Australia*
- Aug. 8-15 International Geographical Union, 17th General Assembly, *Washington*
- Aug. 15- Sept. 15 International Union of Theoretical and Applied Mechanics, 8th General Assembly, *Istanbul*
- Sept. 3-5 International Council of Scientific Unions, 6th General Assembly, *Amsterdam*

Joint Commissions, 1951-52

1951

- Aug. 16-18 Joint Commission on Radiometeorology, *Brussels*
- September Joint Commission on Oceanography, *Brussels*

1952

- Summer Joint Commission on High Altitude Research Stations, *Colorado*
- Summer Joint Commission on Spectroscopy, *Columbus, Ohio*
- Summer Joint Commission on the Ionosphere, *Australia*

New International Union

In September 1950 representatives of twenty-five nations assembled in New York City to draw up the statutes and by-laws for an International Mathematical Union. The New York conference was initiated at the joint request of the American Mathematical Society, the Mathematical Association of America, the Institute of Mathematical Statistics, and the Association for Symbolic Logic. The Policy Committee representing these four societies has recommended that the United States adhere to the new Mathematical Union through the National Research Council and that the Chairman of the Council appoint a U.S.A. national committee to represent the mathematicians of the United States in all matters relating to the Union.

On February 25 Marston Morse, Chairman of the Division of Mathematics of the NRC, requested the Academy-Research Council to establish a U.S.A. national committee for mathematics and to recommend to the Department of State that the United States adhere to the International Mathematical Union. Dr. Morse's request was approved and the Chairman of the Research Council was authorized to inform the Secretary of State of the recommended action.

When ten nations indicate their intention to adhere, the Union will be established. It is hoped that adherence by the various governments will be received in time to hold the first general assembly of the International Mathematical Union in the spring of 1952.

UNESCO

Third National Conference

The Committee on United Nations Educational, Scientific and Cultural Organiza-

tion of the NRC has been asked to assist in arranging the science program for the Third National Conference of UNESCO to be held in New York City, September 9-13. In carrying out this assignment the Committee will invite the cooperation of all divisions of the NRC. Preliminary plans will be discussed at a meeting of the Committee to be held in the near future. Maurice B. Visscher, University of Minnesota, Chairman, will preside.

The theme of the Third National Conference will be the work of the United Nations and its specialized agencies. The program will stress the need for increased understanding and effective participation in world affairs. About 2500 representatives of national organizations and community groups are expected to attend.

Educational, Scientific, and Cultural Materials

The Committee on UNESCO has endorsed in principle the Agreement on Importation of Educational, Scientific, and Cultural Materials which was approved at the Fifth Session of the General Conference of UNESCO in Florence, May-June 1950.

The Agreement, which calls for duty-free movement of certain specified educational, scientific and cultural materials between member states has been signed by 19 countries. The United States is currently considering various aspects of the Agreement and the desirability of signature.

In the case of the United States, congressional action will be required for ratification. The Agreement will become effective only after it has been ratified by 10 of the member states.

Five Years of Work

A twenty-page review of UNESCO's endeavors and accomplishments to date, prepared at UNESCO House in Paris, has been reproduced by the U. S. National Commission. Copies may be obtained from the UNESCO Relations Staff, Department of State.

SCIENTIFIC PUBLICATION

The Committee on International Scientific Publication of the NRC was organized in March 1950, for continuation, on a worldwide basis, of work which has been carried

out in the inter-American field since 1941. Its aim is to encourage and stimulate an exchange of the results of scientific research between the United States and other countries. It is supported by a grant-in-aid from the Department of State, and its work is closely coordinated with the International Information Program of the Department of State.

Comprehensive lists of important scientific institutions, societies, and personnel are compiled and maintained. A detailed Directory of Latin American Scientific Institutions and Societies has been compiled.

Roger Adams, Foreign Secretary of the National Academy of Sciences and Chairman of the Division of International Relations, is Chairman of the Committee. Mrs. Christina M. Buechner serves as Executive Secretary. Committee headquarters are located in the building of the American Academy of Arts and Sciences, 28 Newbury Street, Boston, Mass.

INTERNATIONAL CONGRESSES

1951

- March 15 First Congress of the World Meteorological Organization, *Paris*
- May 4-11 Latin American Congress of Chemistry, *Lima, Peru*
- May 28- June 6 Third World Petroleum Congress, *The Hague*
- July 6-10 Congress on Nuclear Physics, *Copenhagen*
- July 16-21 13th International Congress of Psychology, *Stockholm*
- Aug. 29- Sept. 11 Eighth International Congress on Refrigeration, *London*
- Sept. 2-7 International Congress on Poliomyelitis, *Copenhagen*
- Sept. 9-13 Twelfth International Congress of Pure and Applied Chemistry, *New York*
- Sept. 11-20 First Building Research Congress, *London*
- Oct. 1-5 First Metallurgical Congress, *Detroit*

1952

- April Fifth International Hydrological Congress, *Monaco*
- July International Congress of Zootechnics, *Copenhagen*
- July Second International Congress of Biochemistry, *Paris*
- August International Congress on Analytical Chemistry, *Oxford, England*
- August International Congress for Applied Mechanics, *Istanbul*
- September International Geological Congress, *Algiers*

AFFILIATED SOCIETIES

The following schedule of meetings of Societies affiliated with the National Research Council was prepared by the Librarian of the Academy-Council from information supplied by the Societies. For details regarding a specific meeting, please write direct to the Society Secretary.

January		9-13	American College of Physicians, <i>St. Louis, Mo.</i>
8-12	Society of Automotive Engineers, <i>Detroit, Mich.</i>	11-13	American Surgical Association, <i>Washington, D. C.</i>
10-12	American Society of Photogrammetry, <i>Washington, D. C.</i>	19-21	American Philosophical Society, <i>Philadelphia, Pa.</i>
11	American Genetic Association, <i>Washington, D. C.</i>	22-26	American Ceramic Society, <i>Chicago, Ill.</i>
22-25	American Society of Heating and Ventilating Engineers, <i>Philadelphia, Pa.</i>	23-26	American Association of Petroleum Geologists, <i>St. Louis, Mo.</i>
26	American Institute of Consulting Engineers, <i>New York City</i>	23-26	Society of Exploration Geophysicists, <i>St. Louis, Mo.</i>
29-Feb. 1	Institute of the Aeronautical Sciences, <i>New York City</i>	23-27	Society of Economic Paleontologists and Mineralogists, <i>St. Louis, Mo.</i>
29	American Meteorological Society, <i>New York City</i>	26-28	American Physical Society, <i>Washington, D. C.</i>
		26-28	American Association of Pathologists and Bacteriologists, <i>Cleveland, Ohio</i>
February		29-May 3	American Society for Experimental Pathology, <i>Cleveland, Ohio</i>
1-3	American Physical Society, <i>New York City</i>	29-May 3	American Society of Biological Chemists, <i>Cleveland, Ohio</i>
15-17	American Crystallographic Association, <i>Washington, D. C.</i>	29-May 3	American Institute of Nutrition, <i>Cleveland, Ohio</i>
18-22	American Institute of Mining and Metallurgical Engineers, <i>St. Louis, Mo.</i>	29-May 3	American Society for Pharmacology and Experimental Therapeutics, <i>Cleveland, Ohio</i>
19-22	Society of Economic Geologists, <i>St. Louis, Mo.</i>	29-May 3	American Physiological Society, <i>Cleveland, Ohio</i>
		30-May 2	American Geophysical Union, <i>Washington, D. C.</i>
March		30	American Society for Clinical Investigation, <i>Atlantic City, N. J.</i>
1-3	Optical Society of America (Winter Meeting), <i>Washington, D. C.</i>	May	
5-7	Wildlife Society, <i>Milwaukee, Wis.</i>	1-2	Association of American Physicians, <i>Atlantic City, N. J.</i>
8-10	American Physical Society, <i>Pittsburgh, Pa.</i>	7-11	American Psychiatric Association, <i>Cincinnati, Ohio</i>
19-22	Institute of Radio Engineers, <i>New York City</i>	9	American Academy of Arts and Sciences, <i>Boston, Mass.</i>
19-22	Association of American Geographers, <i>Chicago, Ill.</i>	10-12	Acoustical Society of America, <i>Washington, D. C.</i>
20	American Geographical Society, <i>New York City</i>	14-16	Industrial Research Institute, <i>Washington, D. C.</i>
21-23	American Association of Anatomists, <i>Detroit, Mich.</i>	23-24	American Iron and Steel Institute, <i>New York City</i>
23-24	Seismological Society of America, <i>Los Angeles, Calif.</i>	27-30	American Society of Refrigerating Engineers, <i>Detroit, Mich.</i>
		27-31	Society of American Bacteriologists, <i>Chicago, Ill.</i>
April		June	
1-5	American Chemical Society (Spring Meeting—joint), <i>Boston, Mass.</i>		American Society of Mammalogists, <i>Chicago, Ill.</i>
8-12	American Chemical Society (Spring Meeting), <i>Cleveland, Ohio</i>		
8-12	Electrochemical Society, <i>Washington, D. C.</i>		

6-8	American Dairy Science Association, <i>Knoxville, Tenn.</i>	October	
11-15	American Medical Association, <i>Atlantic City, N. J.</i>	15-18	American Dental Association, <i>Washington, D. C.</i>
14-16	American Physical Society, <i>Schenectady, N. Y.</i>	15-19	American Welding Society, <i>Detroit, Mich.</i>
18-20	American Neurological Association, <i>Atlantic City, N. J.</i>	15-19	American Society for Metals, <i>Detroit, Mich.</i>
18-20	American Congress on Surveying and Mapping, <i>Washington, D. C.</i>	20-25	American Academy of Pediatrics, <i>Toronto, Canada</i>
18-22	American Society for Testing Materials, <i>Atlantic City, N. J.</i>	21	Optical Society of America, <i>Chicago, Ill.</i>
20-23	American Astronomical Society, <i>Washington, D. C.</i>	22-25	American Society of Civil Engineers, <i>New York City</i>
25-28	American Physical Society, <i>Vancouver, Canada</i>		
25-29	American Institute of Electrical Engineers (General Summer Meeting), <i>Toronto, Canada</i>	November	
25-29	American Society for Engineering Education, <i>East Lansing, Mich.</i>	5-9	American College of Surgeons (37th Annual Clinical Congress), <i>San Francisco, Calif.</i>
Last week	American Society of Ichthyologists and Herpetologists, <i>Chicago, Ill.</i>	8-10	Geological Society of America, <i>Detroit, Mich.</i>
		8-10	Mineralogical Society of America, <i>Detroit, Mich.</i>
		8-10	Society of Vertebrate Paleontology, <i>Detroit, Mich.</i>
August		13-15	Paleontological Society, <i>Detroit, Mich.</i>
20-23	American Veterinary Medical Association, <i>Milwaukee, Wis.</i>	14-17	Society of Naval Architects and Marine Engineers, <i>New York City</i>
26-30	Poultry Science Association, <i>Knoxville, Tenn.</i>	15	American Academy of Tropical Medicine, <i>Chicago, Ill.</i>
27-30	Illuminating Engineering Society, <i>Washington, D. C.</i>	15-17	American Society of Tropical Medicine, <i>Chicago, Ill.</i>
27-30	American Society of Agronomy, <i>State College, Pa.</i>	15-17	American Anthropological Association, <i>Chicago, Ill.</i>
27-31	Soil Science Society of America, <i>State College, Pa.</i>	15-17	American Society of Parasitologists, <i>Chicago, Ill.</i>
30-Sept. 3	Society for the Study of Development and Growth, <i>Northampton, Mass.</i>	23-24	American Society of Animal Production, <i>Chicago, Ill.</i>
31-Sept. 5	American Psychological Association, <i>Chicago, Ill.</i>	25-30	American Society of Mechanical Engineers, <i>Atlantic City, N. J.</i>
		December	
September		2-5	American Institute of Chemical Engineers, <i>Atlantic City, N. J.</i>
3-7	American Chemical Society (Fall Meeting), <i>New York City</i>	9-12	American Phytopathological Society, <i>Cincinnati, Ohio</i>
6-8	American Physiological Society (Fall Meeting), <i>Salt Lake City, Utah</i>	9-13	Entomological Society of America, <i>Cincinnati, Ohio</i>
9-12	American Society for Horticultural Science, <i>Minneapolis, Minn.</i>	9-12	American Association of Economic Entomologists, <i>Cincinnati, Ohio</i>
9-12	American Society of Plant Physiologists, <i>Minneapolis, Minn.</i>	12-15	Society of American Foresters, <i>Biloxi, Miss.</i>
9-12	Botanical Society of America, <i>Minneapolis, Minn.</i>	26-29	American Society of Zoologists, <i>Philadelphia, Pa.</i>
9-12	Ecological Society of America, <i>Minneapolis, Minn.</i>	26-31	American Association for the Advancement of Science, <i>Philadelphia, Pa.</i>
9-12	Genetics Society of America, <i>Minneapolis, Minn.</i>	27-29	Biometric Society, Eastern North American Region, <i>Boston, Mass.</i>
9-12	Mycological Society of America, <i>Minneapolis, Minn.</i>	26-28	American Mathematical Society, <i>Providence, R. I.</i>
23-28	American Roentgen Ray Society, <i>Washington, D. C.</i>	29	Mathematical Association of America, <i>Providence, R. I.</i>
24-27	Institute of Traffic Engineers, <i>Los Angeles, Calif.</i>		Institute of Mathematical Statistics, <i>Boston, Mass.</i>

THE CALENDAR

The following Academy-Research Council meetings will be held in Washington unless otherwise indicated. Attendance is restricted to members and invited guests except when meetings are announced as open to the public.

March		20	Subcommittee on Ship Structure
1-3	Medical Fellowship Board	21	Subcommittee on Shock
9	Merck Fellowship Board, <i>New York City</i>	22	Committee on Surgery
10	Radio Corporation of America Fellowship Board	24	NRC Fellowship Board
		28	Committee on Blood and Blood Derivatives
10	Medical Fellowship Board—Atomic Energy Commission Fellowships in Medical Sciences	28	Subcommittee on Liver Diseases
		29	Subcommittee on Infectious Diseases and Chemotherapy
12	Subcommittee on the Chemistry of Blood Coagulation	29	Steering Committee, Food and Nutrition Board
13	Committee on Psychiatry	30	Committee on Medicine
14	Committee on Ship Steel	April	
15-16	Subcommittee on Pathology and Trauma	2	Executive Committee, Committee on Growth, <i>Princeton, N. J.</i>
15-16	Subcommittee on Periodontal Diseases	9	Subcommittees of Committee on Sanitary Engineering
15-16	Atomic Energy Commission Pre-Doctoral Fellowship Board	10	Committee on Sanitary Engineering
15-16	Food Protection Committee	12-14	Symposium on Selection of Military Personnel
16	Atomic Energy Commission Post-Doctoral Fellowship Board	13-15	Section on Fellowships of the Committee on Growth, <i>Princeton, N. J.</i>
17	Committee on Vitamin Deficiency Studies, <i>Elgin, Ill.</i>	16-18	U. S. A. National Committee, International Scientific Radio Union
17	Committee on Mathematics, Advisory to Office of Naval Research	18	Conference on Plasma Substitutes
19	U. S. A. National Committee of the International Geographical Union, <i>Chicago, Ill.</i>	19	Subcommittee on Shock
19	Conference on Preservation of Textiles and Cordage	23-25	Annual Meeting, National Academy of Sciences
20	Subcommittee on Neurosurgery	26	Committee on Sex Research
		27-28	Annual Meeting, Division of Geology and Geography
		30-May 2	American Geophysical Union

NEW PUBLICATIONS

- ALLEN, JAMES S. *Recent Applications of Electron-Multiplier Tubes*. Nuclear Science Series, Preliminary Report No. 10. National Research Council, 1950. 14 p.
- BAINBRIDGE, K. T., AND NIER, A. O. *Relative Isotopic Abundances of the Elements*. Nuclear Science Series, Preliminary Report No. 9. National Research Council, 1950. 59 p.
- Industrial Research Laboratories of the United States*, 9th ed. Compiled by Myron J. Rand. Bulletin No. 120, National Research Council, 1950. 444 p. \$5.00.
- Laboratory Design*. H. S. Coleman, ed. New York: Reinhold Publishing Corporation, 1951. 393 p.
- LEONARD, FREDERICK, AND HUTTRER, CHARLES P. *Histamine Antagonists*. National Research Council, 1950. 122 p. \$1.50.
- LONG, EDMOND R. *Harry Gideon Wells*. National Academy of Sciences Biographical Memoirs, vol. 26, no. 12, 1950, pp. 233-263.
- Report of the Committee on the Measurement of Geologic Time, 1949-1950*. National Research Council, 1950. 118 p. \$1.00. Mimeographed.
- Report of the Committee on a Treatise on Marine Ecology and Paleocology, 1949-1950*. National Research Council, 1950. 59 p. \$1.00.
- Summary Tables of Biological Tests*. Vol. 2, no. 6. National Research Council, 1950. 375 p.

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